Griff : A Simple Daily Aid

Research Thesis

Presented in partial fulfillment of the requirements for graduation with research distinction in the undergraduate colleges of The Ohio State University

by

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griff

A simple daily aid, by Lauren Todd

Abstract

Arthritis can hold many people back from living everyday life with confidence. These individuals generally must learn to live with pain and inaccessible tasks. What if there was a simple tool to make life easier for those with arthritis and other hand impairments?

Griff is a small, handheld tool that addresses the daily struggles of those with hand impairments. It is adaptable to many needs and situations, while staying discreet and portable. The design is accessible in shape and size, allowing each individual to use Griff in any way that works for them. Simplicity and comfort allows Griff to aid people with arthritis in staying confident in their abilities.

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The Story

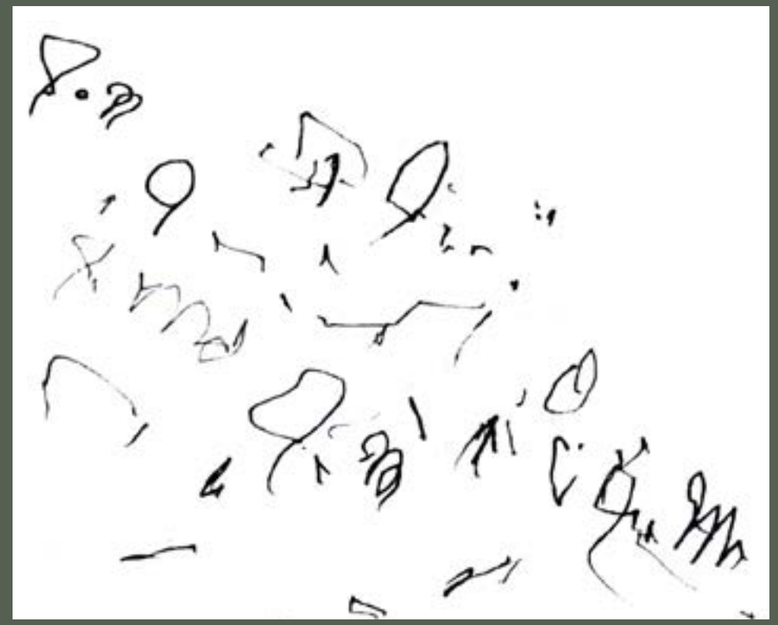
This is my dad. He is 56 years old, and suffers from Rheumatoid Arthritis and Neuropathy in both of his hands. He struggles to carry out daily tasks on his own, and frequently needs to ask for help.

Because of this, he often feels. . .

incapable,
ashamed,
and unvalued

Diving Deeper. . .

7 out of 10 of my dad's fingers are partially or completely non-functional. He finds it difficult to complete tasks that require precise gripping strength, such as writing with a pen and grasping a doorknob. In order to handle these difficulties, he must ask for help, create some type of solution that often involves an embarrassing, conspicuous struggle, or avoid the task altogether.



Writing without aid

Problem Statement

How can we aid people with hand impairments in feeling empowered and confident in completing tasks on their own?

Background Research

Aspects of success include:

Consideration of adaptability

Discreet forms

Respectful marketing

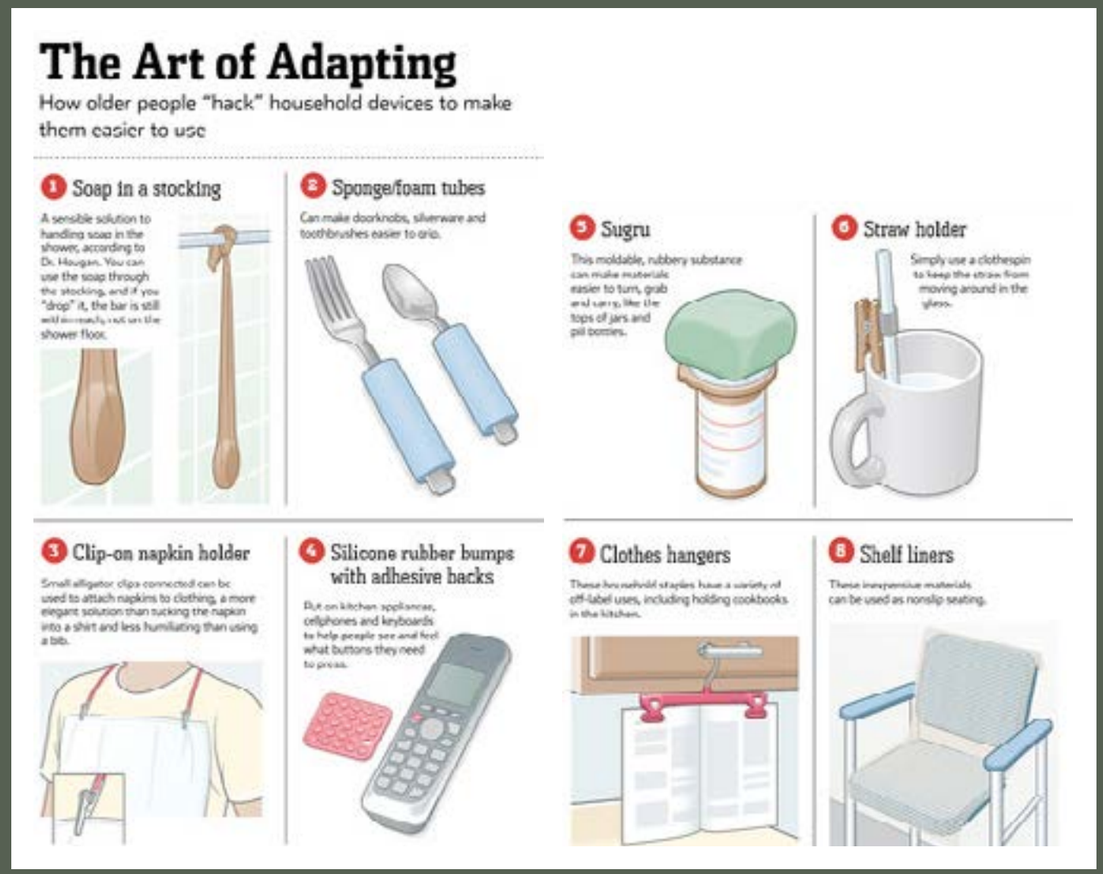
Coping with impairment requires:

Augmenting inaccessible products

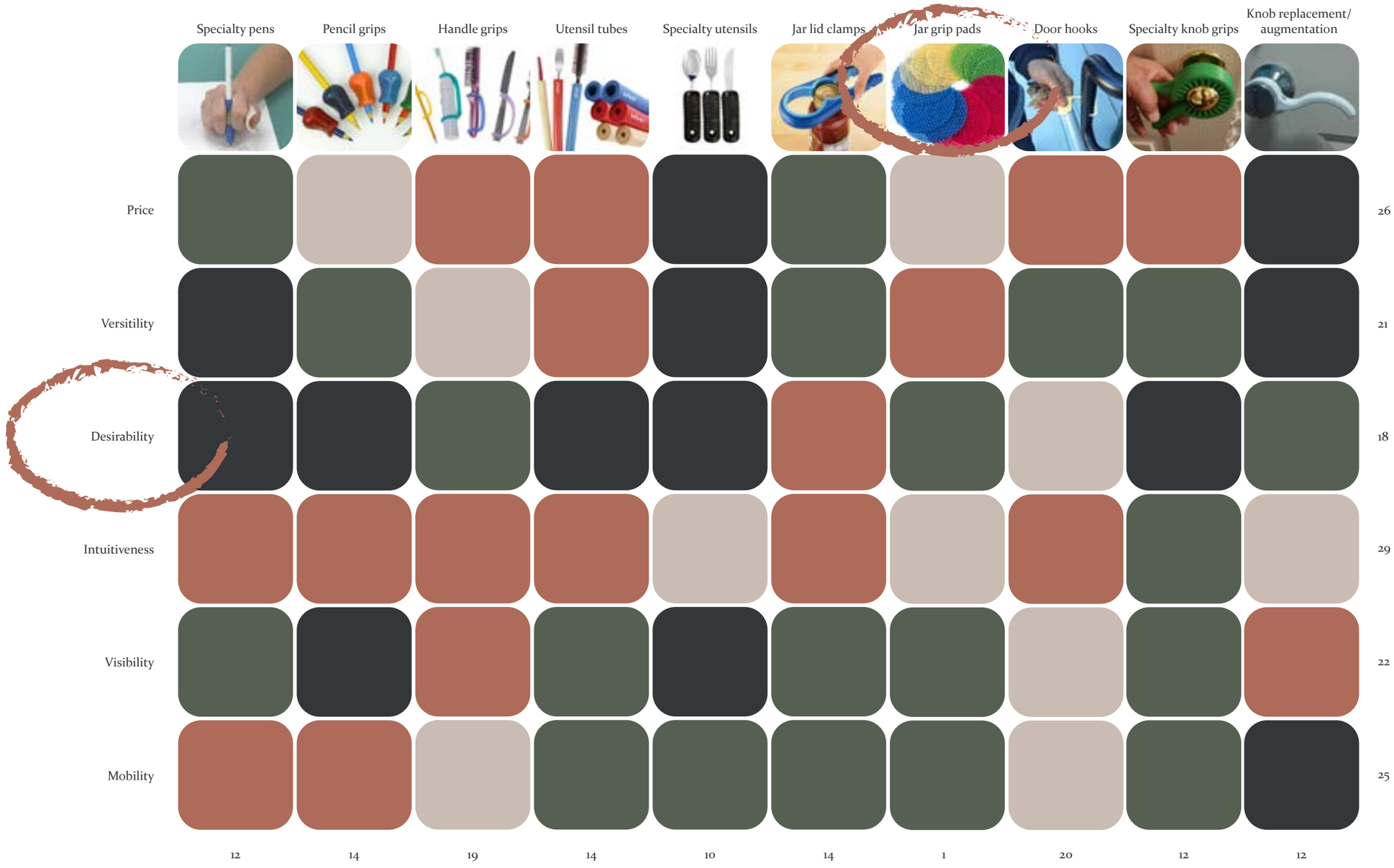
Buying expensive specialty products

Disregarding personal safety

Sacrificing independence



Market Research: Searching for Opportunities



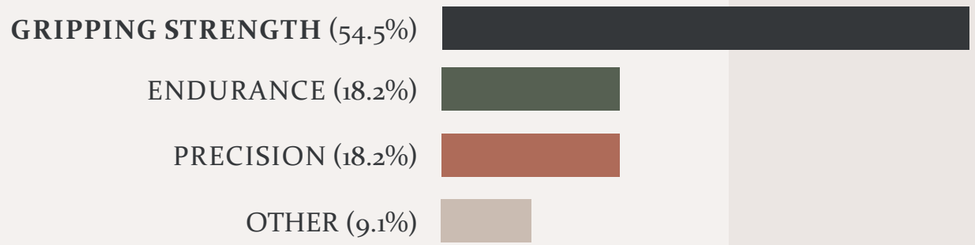
Online Survey Findings

50% of impaired participants were over the age of 40

100%

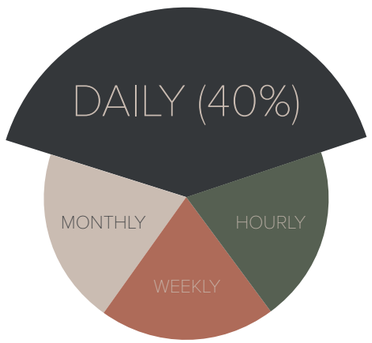
of able participants have had to help their impaired friend with a daily task

What hand function is most affected?

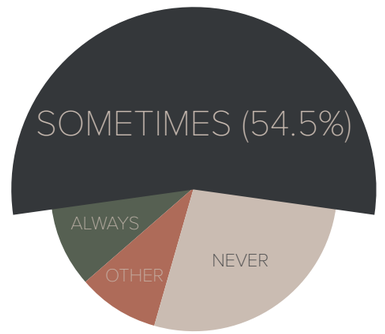


Top 3 most difficult tasks

How often are participants affected by hand impairment?



How often do participants need help because of impairment?



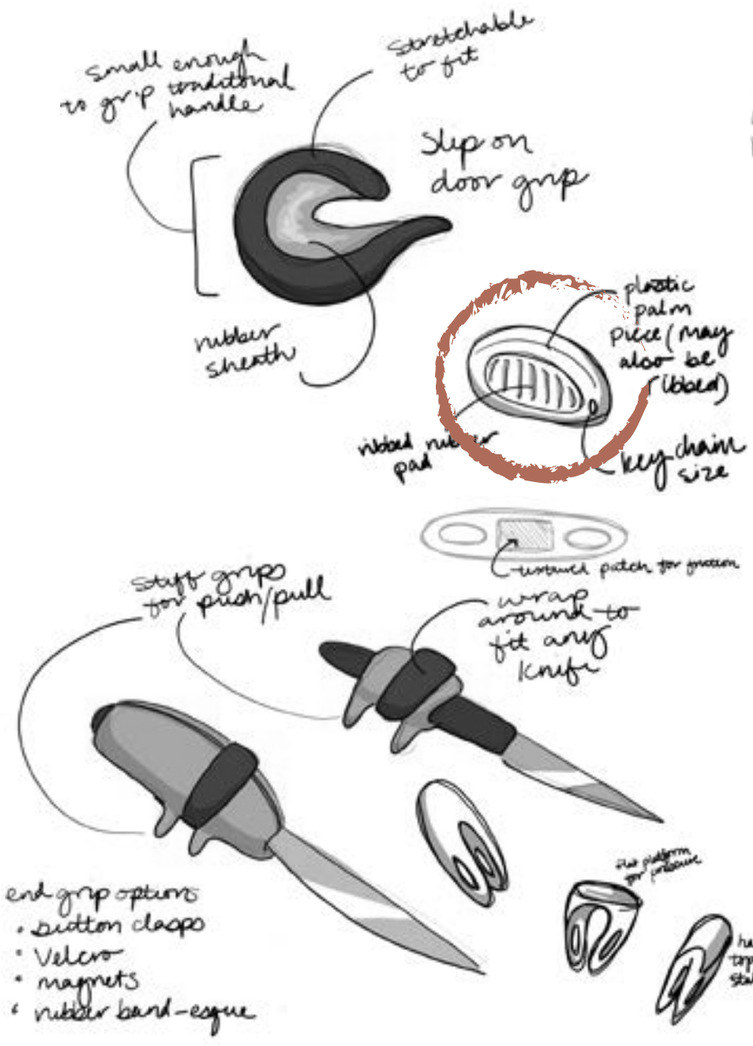
Hypotheses

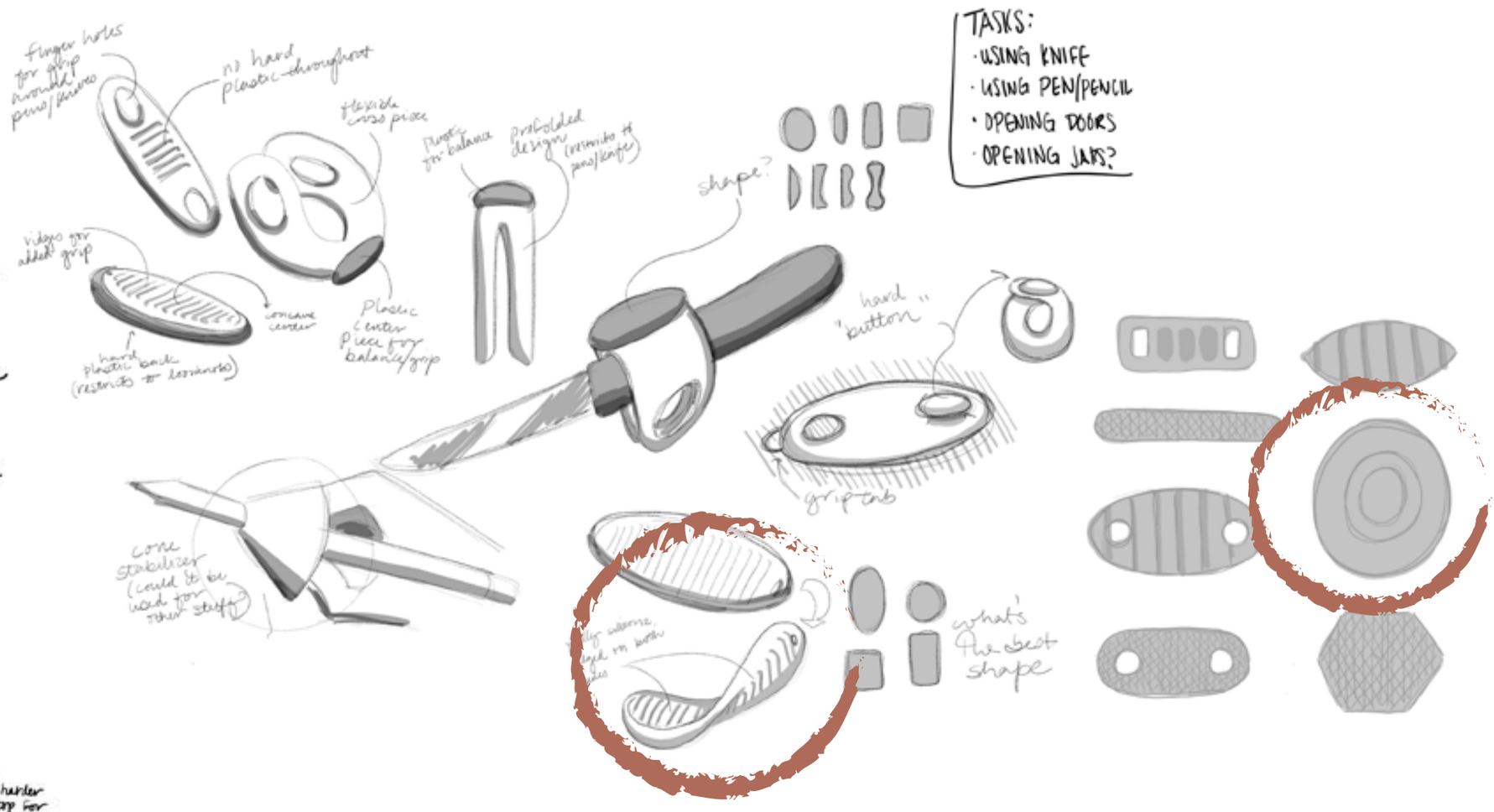
Users want to feel valued and respected

Users want a discreet form with adaptable usage

A textured surface will provide more grip

Development Sketches





Developmental sketches developed the idea of a tool that addresses multiple specific tasks. They led to ideas surrounding function, shape, size, and texture. Defining the function preceded potential forms, and eventually informed the creation of prototypes.





Prototyping

METHODOLOGY

Participant was presented with seven different prototypes.

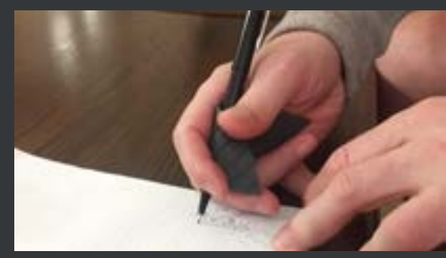
They were asked to complete four tasks with each prototype:

- Use a pen
- Open a door
- Open a jar
- Use a knife

Participant was asked to rate each prototype on a scale of one to ten (one meaning useless, ten meaning solving all problems with completing tasks).

We then had an open discussion about each prototype's pros and cons, as well as other unexpected aspects.









Prototyping

INSIGHTS

Treads/texture are not helpful

The more surface area, the better

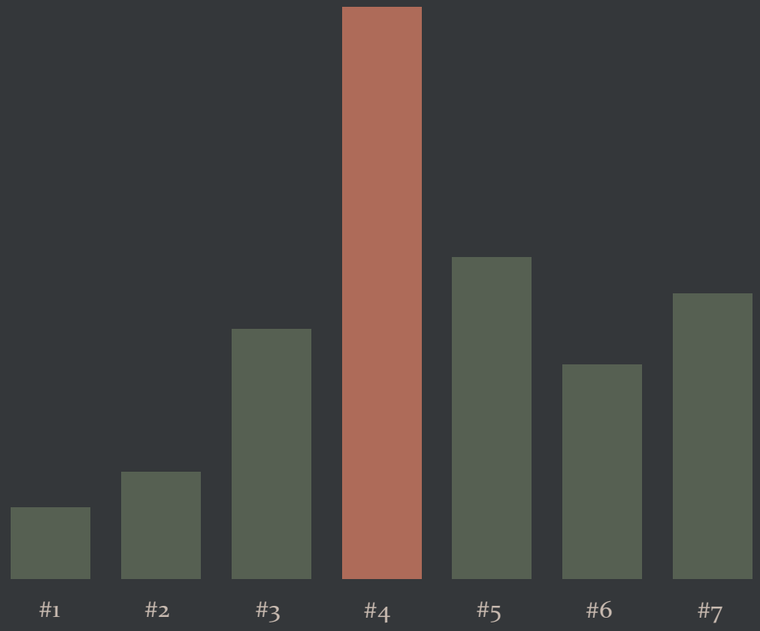
Finger holes are confusing and tricky

Circle shape is most adaptable

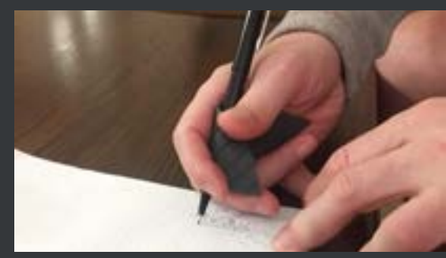
Flexibility is key

Material matters!

PROTOTYPE EFFECTIVENESS







Objectives

Design a simple, adaptive tool that aids in providing grip

Develop a respectful and supportive form and brand language

Features

Conscious of the user and the effects of the product on mental wellbeing

Consideration of all potential users

Easy to use and clear in its function

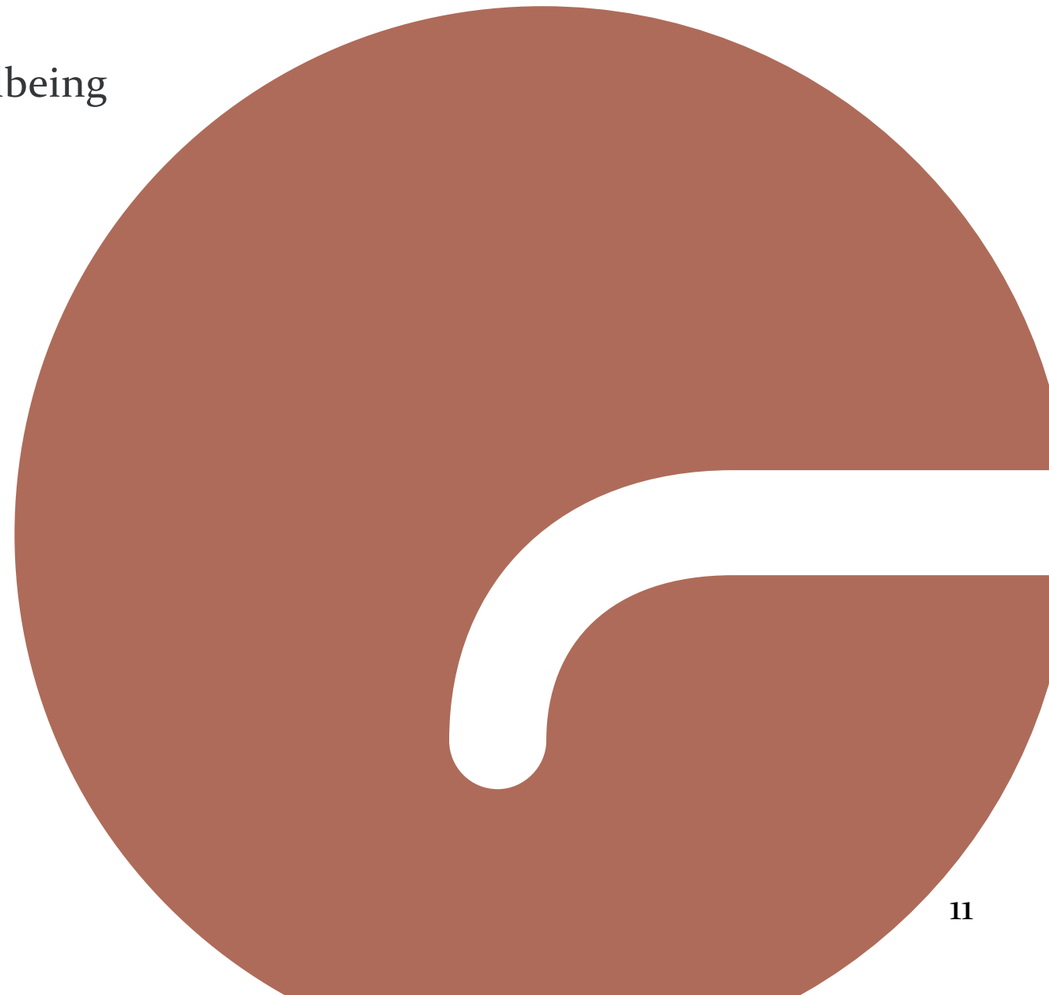
Easily incorporated into everyday tasks

Attributes

Dignified

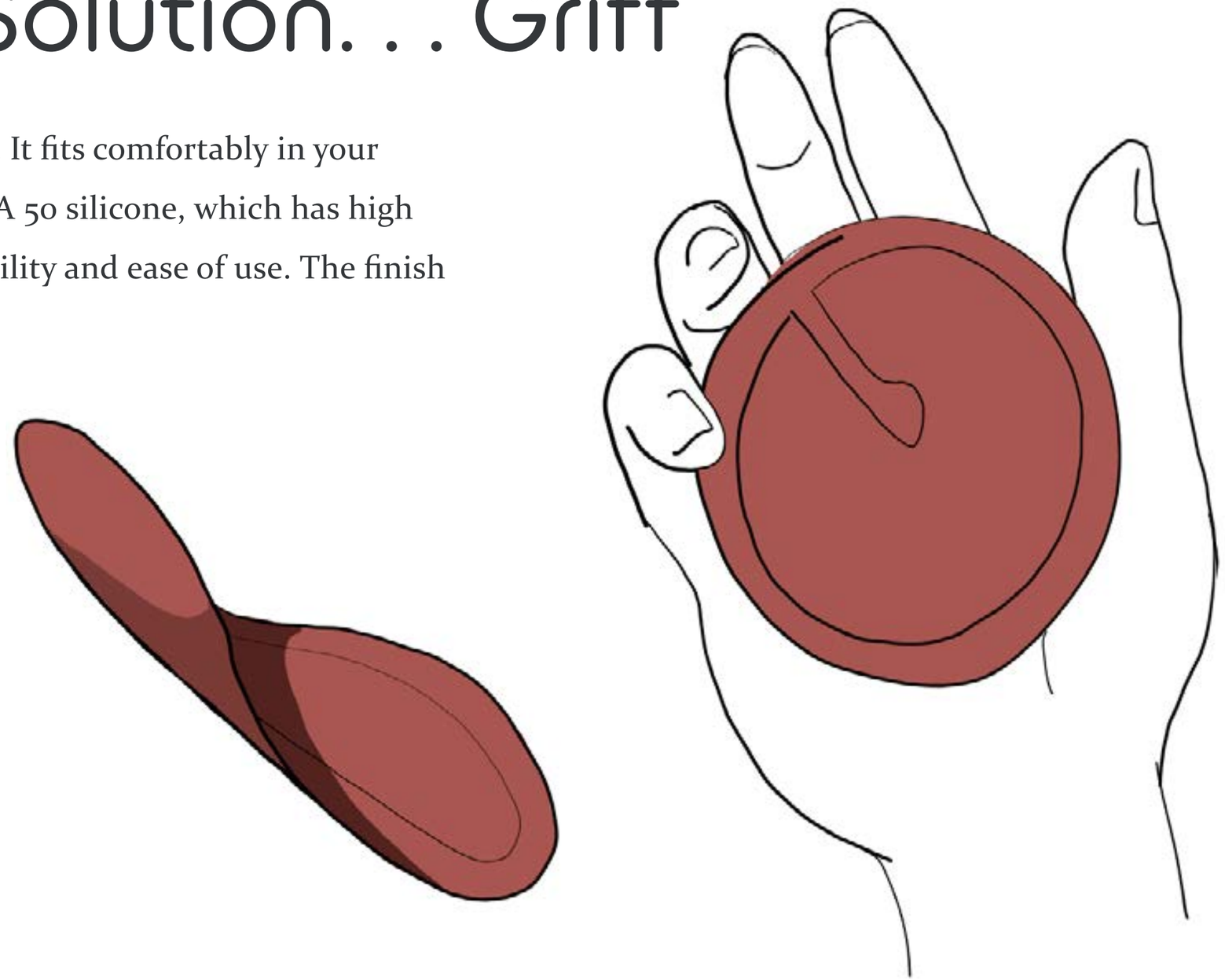
Accessible

Intuitive



The Final Solution. . . Griff

Griff is a small and simple tool. It fits comfortably in your hand, and is made from Shore A 50 silicone, which has high flexibility and stretch for durability and ease of use. The finish is satin to repel dust and dirt.



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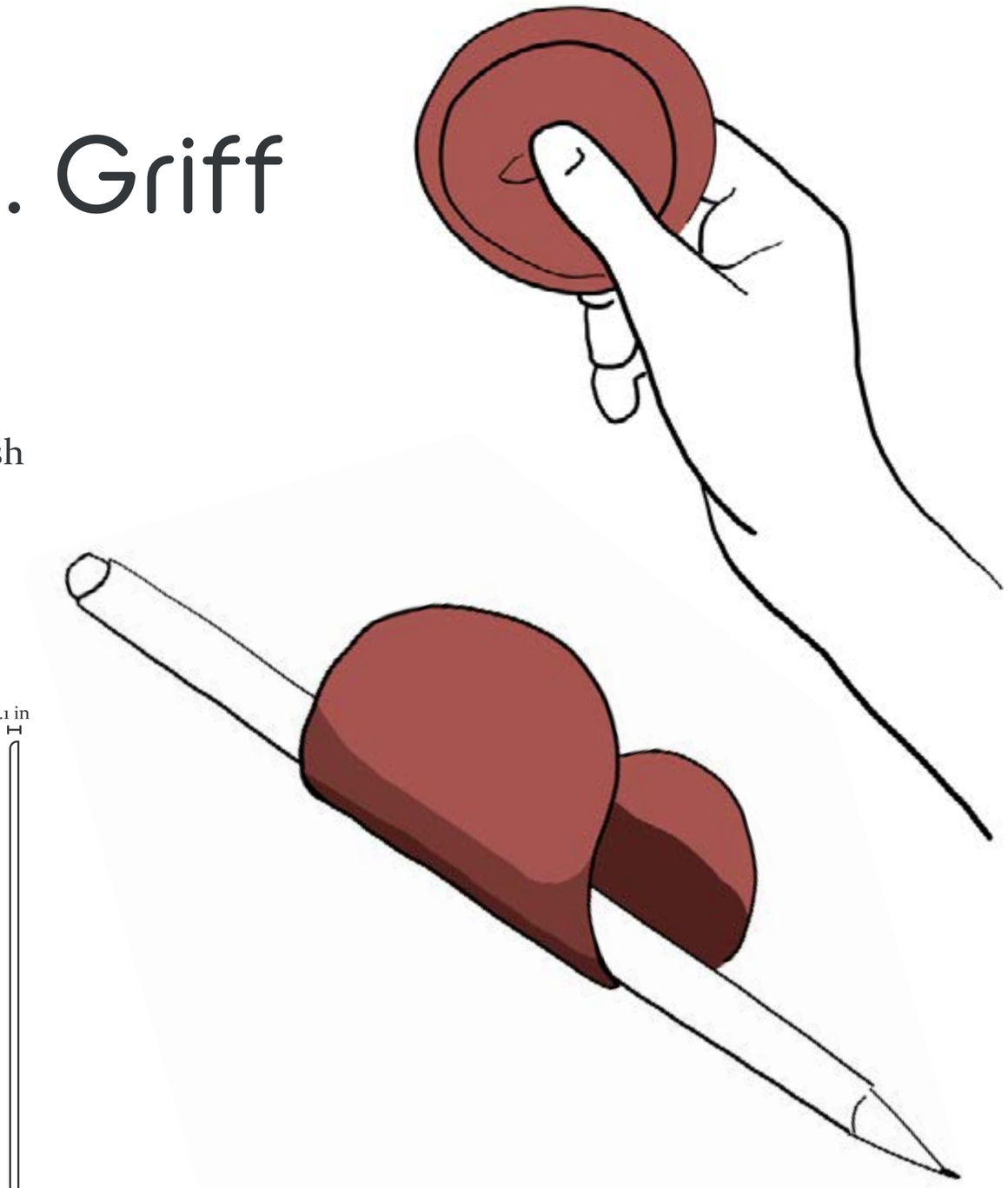

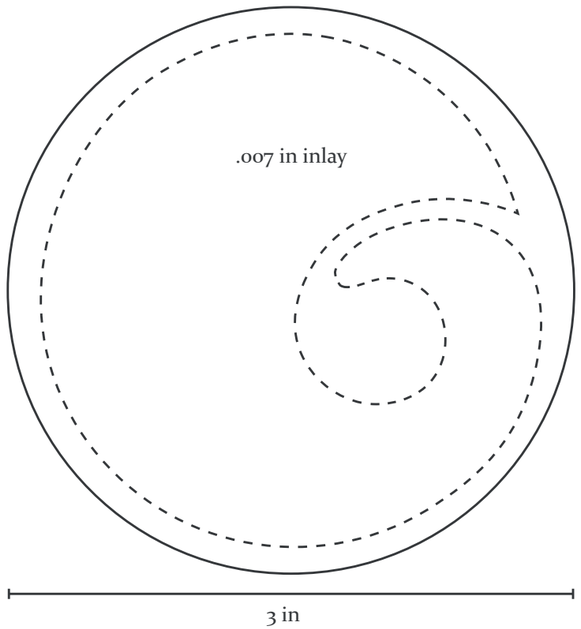

This is Pam.

She uses her Griff when
she goes to the bank.

It helps her to open the door
to her doctor's office.

She likes to use two when
she eats dinner.

She uses her
Griff *everyday*.

Her Griff makes brushing
her teeth much easier.

Brand Language

KEY CHARACTERISTICS

Dignified | Subtle | Accessible

LIGATURE TO IMPLY CONNECTION
OF PRODUCT TO HAND

CIRCULAR G TO MIMICK
PRODUCT SHAPE

ROUNDED TYPEFACE

RBG: 202 188 178
CMYK: 21 23 27 0

RBG: 174 107 89
CMYK: 27 63 65 9

RBG: 86 96 82
CMYK: 64 47 64 29

RBG: 52 55 58
CMYK: 72 63 59 53

Final Rendering

Final Physical Prototype

The Results

My dad was able to write his signature with the final prototype I provided. He now can complete common tasks with relative ease and confidence. No more asking for someone to cut his meat. No more struggling to open a door in public. Using Griff, he can navigate the world without feeling inferior or insecure. Griff makes him feel. . . capable, confident, and appreciated.

Writing without Griff

Writing with Griff

Reflection

My father has struggled to use his hands for as long as I can remember. I can remember him asking my older brother to help him use tools while fixing the car or other household appliances. He would always use a shoehorn to get his shoes on, because he could not pull his feet inside. He also always held his silverware strangely, due to the bend and swollen joints in his knuckles. This was part of everyday life, and I never thought to question if his struggle could be lessened. Within the last few years, however, his hands became worse. He could barely cut his own food, spent 10 minutes trying to button his shirt, and had completely lost his ability to write. I realized that my field of industrial design had prepared me to help my father in his struggle to use his hands. Not only had I learned to research and understand the needs of those with a problem, I had also learned how to implement those findings into a feasible and physical product that addressed those specific needs. This was an opportunity to help my dad, while learning and growing in the process.

The practice of Industrial Design is often overlooked (perhaps this is why I was so late to realize my capability to help my dad). It is the underpinning to so many projects and systems, without ever being blatantly obvious. Even less obvious is the research and understanding that is put in before the design end of the process even begins. The research and analysis are just as important--if not more so--than the glamorous end products that are produced by them. That is why I began my process by trying to understand how and why my dad (and those like him) struggles with certain tasks everyday.

Though my dad was my main and most accessible participant, I realized that researching other similar participants with similar issues was definitely important. Recognizing that each individual has a unique experience when it comes to hand impairment was important to be aware of, but pulling characteristic similarities from the data allowed me to focus on key pain points that could be more comprehensively addressed. These similarities centered themselves around a lack or lessening of grip strength, which made many tasks and products inaccessible to those with hand impairments. Most average tools that we might think of as easy to use are designed for the majority of people who have completely functioning hands. Tools that are designed for hand impaired users are generally inadequate, embarrassing, or expensive. Design as a field should produce results that are directly opposite of these terms. That is why I set out to address these user needs in a simple, functional, and dignified way.

After gaining a more broad understanding of the needs at hand, I dove into my dad's specific needs and experiences to gain insight into how he copes with his diminished hand function. During my background research I found that many impaired persons will augment their tools in order to make tasks easier for them. This was not so with my dad. Because he is very reserved and generally does not like to ask for help, he simply suffered through any difficulty he might have without stopping to ask for help or find an easier solution. This fact brought me to another realization. Research, often seen simply as the first step towards the more important steps of the design process, is actually the only way to discover those unseen, unspoken, and unaddressed problem spaces that people might be too embarrassed or complacent in their ways to ask for a better solution for. Finding the hidden and unexpected points of conflict is often the best way to create a lasting, meaningful solution.

Once I had grasped the scope of my father's impairment, I began to ideate. Because he struggled with multiple daily tasks, I worked towards a form that could adjust or apply to different situations. Through iteration and testing, I found that simpler forms allowed for a wider range of applications. Including features like finger holes, keychain loops, protective cases and other complications only made the design more complicated rather than useful. My own ideas about useful aspects and special features were shot down through testing, as the least expected prototypes came forward as the most successful. Through this experience, I learned about why so many impairment tools are unsuccessful. People who experience physical impairments are rarely included within the design process, and even more rarely on the actual design team. Products being designed for the impaired and generally designed by those who are not impaired and therefore have no knowledge of what their daily lives look like. Instead of putting our personal expectations into shape and producing useless tools, it is absolutely imperative to bring in the actual users and trust in their feedback while putting aside our own assumptions about how a product should or should not be used.

That being said, the simplicity of my concluded design seemed like it should be concerning. I felt the urge to add more features, make it more elaborate, more "designed". As an example, I originally planned to include a protective case in order to keep the tool clean and safe from wear and tear. But my father demonstrated that a case would only complicate the use of the tool, and after more research and testing I found that using a specific material would not only repel dust and dirt while maintaining gripiness, but also would enhance stretch and resilience to prevent tears. My assumption that a case was the best solution for protection was invalidated through rigorous research. Adding another piece with the potential to break or cause frustration was really illogical, which is why I returned to my most simplistic form.

Research and design must be applied to

When I was able to provide my dad with a physical prototype to test and use, I was so excited to see it in use. Being able to create something that helped my dad feel capable and confident without awkwardness or shame was an accomplishment that bolstered my drive to help others. Knowing that my skills can be used to directly benefit not only my own family, but also others in the future is what makes design such a unique field. Other fields are generally focused on production of an idea, or selling that idea to the users. No other field has the personal interaction with and deep understanding of a problem space, and others do not get the chance to develop solutions like designers do. I believe that is what makes design so incredibly valuable and personally rewarding.

As I move forward in the design career, I look forward to using this project experience to remind me of the value of user feedback, the importance of simplicity, and the essential nature of empathy when it comes to designing for others. Allowing users to speak for themselves is crucial for a design's success; how can it succeed without the immediate approval of those who will use it on a regular basis? Remembering to simplify, refine, hone the form of a design will ensure that all of its components are properly working and fully functioning. There is no need to add more components if they will only make it more complicated and less secure in its development.

Empathy is, in my opinion, a fundamental need in any design. We must be willing to set aside our own assumptions and biases to let the actual needs and realities of the users come to light, especially when it comes to people with impairments. They are the most influential (and truly helpful) piece of the design process puzzle. Without putting their experiences first and foremost in our minds, there is no way we can produce a strong product in the end. Truthfully, we have to rely on them as active participants more than they rely on us as designers. We can learn so much from their ingenuity and innovative strategies that allow them to function in a world that is designed to function in a completely different way than they do. We can learn to listen in on their capabilities as well as their incapabilities to gain a full picture of functionality in all its differences and distinctions. I have learned the worth of unique human experiences and the necessity of accepting them as part of the design process.

Thank you!